

Work Order ID 154897

Tuesday, January 03, 2017 1:50:16 PM

13 feb
154897

Page 1

Item ID: D412-783-011 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Gross Weight Towing Cable
 Start Date: 1/5/2017 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 1/19/2017 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: **DAS 21 9-89** Date: **JAN 03 2017** Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3943	E								
IIN-D412-783	D	FEB 03 2017	DAS 6 9-89					DAS 21 9-89	17 02-10
100	Document Control	0.00							
100									
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPPD412-783-011 CHG 005								
								DAS 27 9-89	FEB 13 2017
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging								DAS 28 9-89	FEB 10 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By																																																							
								Lead hand / Supervisor Approval Verification																																																							
								QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____	
Misidentified ☐	Past Due ☐																																																														

Work Order ID 154897

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Page 2

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Item Name: Gross Weight Towing Cable
Start Date: 1/5/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 1/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.01							
Quality Control	***ENSURE CALIBRATION CERT. IS IN IIN PAPER WORK***								
130		0.00							
130									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D412-783-011								
	Location: FG129								
	PPP Rev: _____								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.02							
Quality Control									

FEB 13 2017

FEB 13 2017

FEB 13 2017

MF
17-2-13

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

Picklist Print

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Page 1

Work Order ID: 154897

154897

Parent Item: D412-783-011

D412-783-011

Parent Item Name: Gross Weight Towing Cable

Start Date: 1/5/2017

Required Date: 1/19/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 09-06-02 JLM Verified By:EC IPP Rev:B
@ chg 002 DD 10.02.22 Verified By:EC IPP Rev:C @ chg 004
DD 11.08.15 DD verf:JLM IPP Rev:D @ chg 005 DD 15.08.25
DD verf:JLM IPP REV:E 16.09.29 chg D3951-041 to D3951-1 as
per PAR.625 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3951-1 *D3951-1* Equipment Bag		Manufactured	No			110	Each	38.0000	1	1		DAS 6 9-89	DAS 28 9-89
				<u>Location</u>				<u>Loc Qty</u>					
				CCK087				38					
				122832				38					
D3943-041 *D3943-041* Ground Handling Crank Assembly		Manufactured	No			110	Each	0.0000	1	1		DAS 6 9-89	DAS 28 9-89
										153287			
D3954-1 *D3954-1* Gwt Pin		Manufactured	No			110	Each	23.0000	2	2		DAS 6 9-89	DAS 28 9-89
				<u>Location</u>				<u>Loc Qty</u>					
				ST063				23					
				144636				23					
D3954-3 *D3954-3* Gwt Knob		Manufactured	No			110	Each	8.0000	2	2		DAS 6 9-89	DAS 28 9-89
				<u>Location</u>				<u>Loc Qty</u>					
				ST063				8					
				148638				4					
				153473				4					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
240 15 88.0				240 15 88.0				Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
								240 15 88.0	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

Picklist Print

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Page 2

Work Order ID: 154897

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Parent Item: D412-783-011

D412-783-011

Parent Item Name: Gross Weight Towing Cable

Start Date: 1/5/2017

Required Date: 1/19/2017

Start Qty: 1.00

Required Qty: 1.00

D3949-043

Manufactured No

110

Each

6.0000

1

1

D3949-043

Gross Weight Towing Cable Flag Assembly

FEB 06 2017

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

ST512

6

142001

6

DAS
27
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

ITEM No.	QTY -041	QTY -051	QTY -053	PART NUMBER	DESCRIPTION	PREFERRED SUPPLIER
1	X			D3943-041	GROUND HANDLING CRANK ASSEMBLY	
5	1	X		D3943-051	HANDLE ASSEMBLY	
6	1		X	D3943-053	CHAIN ASSEMBLY	
11		1		D3943-1	HANDLE	M/F HANDLE FROM DIS-ASSEMBLED ITEM 39
12	1			D3943-3	HANDLE EXTENSION	
13		1		D3943-5	PLATE	
14		2		D3943-7	STUD	
15			1	D3943-9	CHAIN	USE CHAIN SUPPLIED WITH ITEM 39
16			1	D4405-1	EYE AND FORK SWIVEL	
21	1			D2690-4	LANYARD	
22	1			D3585-1	SET SCREW	
23	1			D3949-041	REMOVE BEFORE FLIGHT FLAG	
24			1	D3954-5	CHAIN LUG	
25	1			D3954-7	RATCHET LUG	
26			1	D3954-9	GWT CHAIN PIN	
31	1			AN5-11A	BOLT	
32	1			AN960-516	WASHER	
33	1			MS21042L5	NUT	
39	1			8143919	LEVER CHAIN HOIST (POWER FIST)	PRINCESS AUTO / 4000 lbs CAPACITY
51	1			S-1475	SPRING	REID SUPPLY
52	1			3408A59	BALL PLUNGER	McMASTER CARR
53	1			HX-15	SOCKET HEAD CAP SCREW 1/4-20 UNC X 0.75 LG	HASKINS
54	1			HX-16	SOCKET HEAD CAP SCREW 1/4-20 UNC X 1.0 LG	HASKINS

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 154897 MLC
17-01-03

RELEASED
2011-07-29
NW

E	CHANGED D3945-3 MATL TO SS (B8-5); FINISH NOW "NONE" (A7-5); TAP DRILL FOR 1/4-20 UNF-2B WAS PILOT HOLE NOTE (B1-5). PER PAR11-113.	MB	11.07.27
D	SHT 1 PL, ITEMS 51-54 RENUMBERED SEE PREV. REV. FOR DETAILS, ITEM 16 ADDED (VIEWS UPDATED). SHT 2 ZN D3 FLAG RELOCATED. SHT 3 ZONE D3, Ø0.12 HOLE DELETED. (SEE NCR 11-495)	AJS	11.05.16
C	RMV FINISH -041 (ZN A8-2), ADD NEW FINISH -051/-053/-1/-3 (A8-3/-4/-5), ADD CALIBRATION (A8-2), (1) HX-16 WAS HX-15 (B3-1, C3-1), PAR 10-001	CP	10.01.26
B	SHT 1 PL, ITEM 31 WAS AN4-10A, ITEM 32 WAS AN960-416, ITEM 33 WAS MS21042-4, ITEM 43 WAS 0.75 LG. SHEETS 2 - 5 NOTES: FINISH FOR ALL COMPONENTS NOW YELLOW SPRAY PAINT.	AJS	09.10.15
A	NEW ISSUE	AJS	09.05.13
REV.	DESCRIPTION	BY	DATE
DESIGN	DSTON / AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN		DRAWING NO.	REV. E
CHECKED	ASS	D3943	SHEET 1 OF 5
MFG. APPR.		TITLE	SCALE
APPROVED		GROSS WEIGHT TOW CRANK ASSY	NTS
DE APPR.	N/A	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	11.07.27		

REMOVE AND RETAIN
RUBBER HAND GRIP

AN5-11A BOLT
AN960-516 WASHER
MS21042L5 NUT

RE-INSTALL
RUBBER HAND-GRIP
HERE

D3943-3
HANDLE EXTENSION

D2690-4 LANYARD

△ C D3949-041 FLAG

HX-16 S/H CAP SCREW

HX-15 S/H CAP SCREW
S-1475 SPRING

CALIBRATION TAG 7

D3585-1 SET SCREW

RE-INSTALL PIN

D3943-053 CHAIN ASSY

8143919
LEVER CHAIN HOIST

(CHAIN NOT SHOWN FOR CLAIRTY)

8143919 LEVER CHAIN HOIST
(SHOWN PRIOR TO MODIFICATION)
(CHAIN SHOWN SHORTENED FOR CLAIRTY)

DISCARD PIN

RETAIN PIN

REMOVE &
DISCARD HOOK

REMOVE & DISCARD HOOK

(CHAIN SHOWN SHORTENED FOR CLAIRTY)

D3943-041 GROUND HANDLING CRANK ASSEMBLY

RELEASED
2011-07-29

NOTES -041:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3943-041" USING FINE POINT PERMANENT INK MARKER
- 7) CALIBRATION TAG PER DART QSI 008 4.4 (ZN C1-2)

DESIGN	DSTOW / AJS	DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. E
MFG. APPR.		D3943	SHEET 2 OF 5
APPROVED		TITLE	SCALE
DE APPR.	N/A	GROSS WEIGHT TOW CRANK ASSY	NTS
DATE	11.07.27	COPYRIGHT © 2005 BY DART AEROSPACE LTD	
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D3943-1 HANDLE

2 PL

9.75

2.00

Ø0.31
THRUD3943-7 STUD
2 PLTHREAD $\frac{1}{4}$ -20 UNC-2B
THRUVIEW A-A
A5-3
(SCALE 2X) B5-3

2 PL

9.38
REF

A B1-3

A B1-3

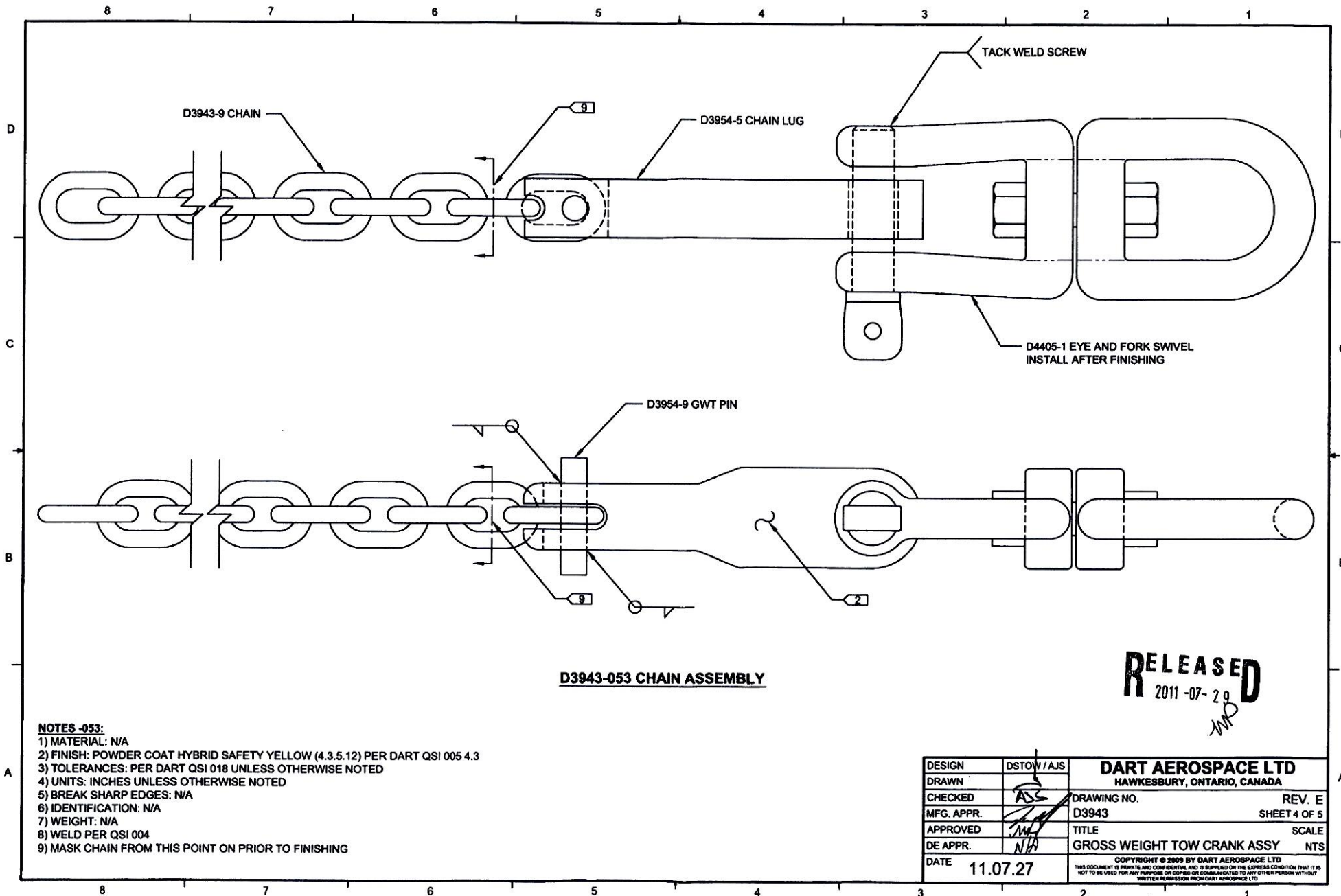
D3943-5 PLATE

D3943-051 HANDLE ASSEMBLY**NOTES -051:**

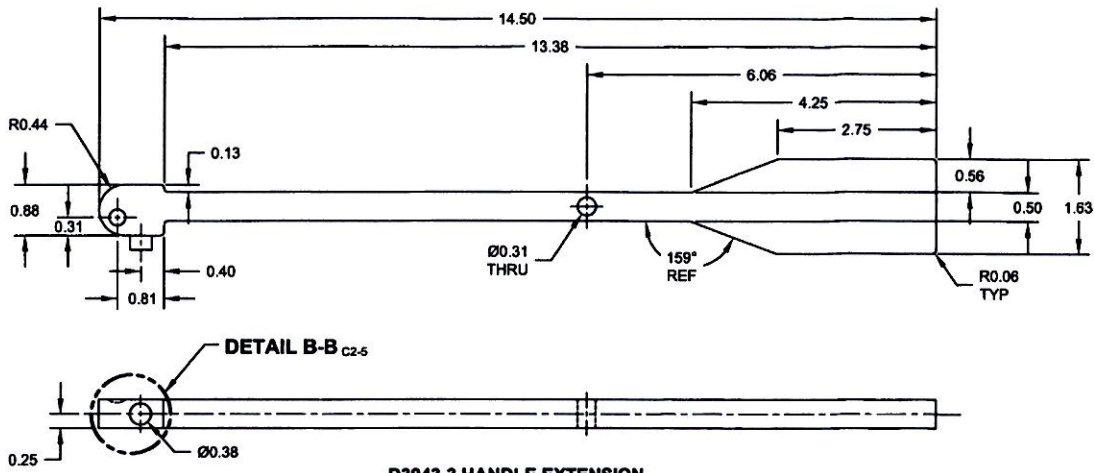
- 1) MATERIAL : N/A
- 2) FINISH: POWDER COAT HYBRID SAFETY YELLOW (4.3.5.12) PER DART QSI 005 4.3
- 3) TOLERANCES: X.XX DIMENSIONS +/- 0.06 ALL OTHERS
PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) MASK ALL THREADS PRIOR TO FINISHING

DESIGN	DSTOW / AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ASS	DRAWING NO. D3943	REV. E SHEET 3 OF 5
CHECKED	AP	TITLE GROSS WEIGHT TOW CRANK ASSY	SCALE NTS
MFG. APPR.	N/A	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	
APPROVED		DATE 11.07.27	
DE APPR.			

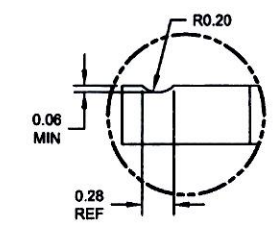
RELEASED
2011-07-28



8 7 6 5 4 3 2 1



D3943-3 HANDLE EXTENSION



DETAIL B-B C7-5
(DIMPLE DETAIL)
(SCALE 2X)

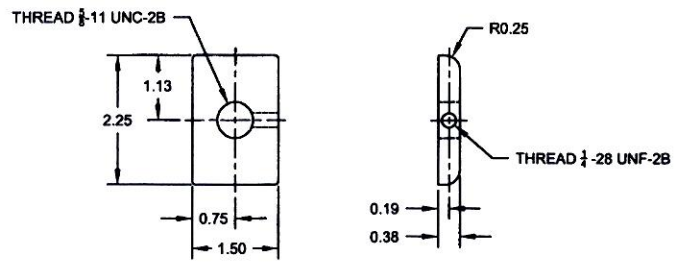
NOTES:

1) MATERIAL -3: AISI 304/316 STAINLESS STEEL SHEET
ANNEALED 2B FINISH PER MIL-S-5059
OR AMS 5513 (304) OR AMS 5524 (316)
OR ASTM A240 OR ASME SA240
REF DART SPEC M304S
OR:
AISI 303 STAINLESS STEEL SHEET
ANNEALED 2B FINISH PER MIL-S-5059
ASTM A240 OR ASME SA240
REF DART SPEC M303S

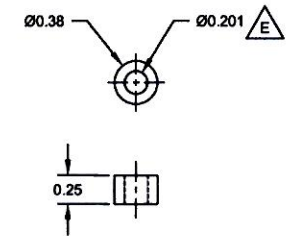
-5: MILD STEEL, SHEET
AISI 1010-1025 OR ASTM A36/A368/A1008
OR CSA G40-21, 38W/44W/50W/60W/70W
REF DART SPEC M1010-S
OR:
MILD STEEL, BAR
AISI 1010-1025 OR ASTM A36/A368/A569/A570
OR CSA G40-21, 38W/44W/50W/60W/70W
REF DART SPEC M1010-B

-7: MILD STEEL, ROUND BAR
AISI 1018-1025
PER MIL-S-7097
REF DART SPEC M1018-R

- 2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A



D3943-5 PLATE



D3943-7 STUD
(SCALE 2X)

RELEASED
2011-07-29

DESIGN	DSTOW / AJS	DART AEROSPACE LTD	
DRAWN		HAWKESSBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D3943	REV. E
MFG. APPR.			SHEET 5 OF 5
APPROVED		TITLE	SCALE
DE APPR.		GROSS WEIGHT TOW CRANK ASSY	NTS
DATE	11.07.27	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

Work Order ID 154897

Friday, February 10, 2017 9:20:26 AM

154897

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Item ID: D412-783-011

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Gross Weight Towing Cable

Start Date: 1/5/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/19/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3943

E

IIN-D412-783

D

DAS
21
9-89

FEB 10 2017

100

Document Control

0.00

100

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPPD412-783-011 CHG 005

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

4.0 CALIBRATION

4.1 Calibration of the D3943-041 Tow Crank Assembly

- 4.1.1 The chain ratchet handle on the D3943-041 Tow Crank Assembly must be calibrated annually to ensure the handle indicates "clicks" when a 3500 lbs – 4000 lbs load has been achieved. To calibrate loosen setscrew that locks the threaded stainless steel ball plunger (Refer to figure 2 for details). Place a load cell inline and ratchet until the 3500 lbs – 4000 lbs has been reached. If the handle clicks before the 3500lbs load then turn plunger clockwise 1/8 turn, remove load and retry. If handle does not click between the 3500lbs and 4000 lbs load, turn plunger 1/8 turn counterclockwise, remove load and retry. Once the handle has been properly set retighten setscrew and test once more.

- 4.1.2 The Tow Crank Assembly may be returned to DART for calibration, at the operator's expense.

5.0 PARTS LIST

QTY -011	PART NUMBER	DESCRIPTION
X	D412-783-011	GROSS WEIGHT TOWING KIT
1	D3943-041	TOW CRANK ASSEMBLY
1	D3949-043	FLAG ASSEMBLY
1	D3951-041	EQUIPMENT BAG
2	D3954-1	GWT PIN
2	D3954-3	GWT KNOB